

West Coast Power LLC

Resource, Reliability and Environmental Concerns of Aging Power Plant Operations and Retirements

DRAFT STAFF WHITE PAPER

CEC Docket No. 03-IEP-01

**Committee Workshop
Sacramento, CA
August 26, 2004**

Draft Aging Power Plant Study

Highlights

- Aging power plants continue to play vital role in reliable delivery to California consumers
- Substantial amount of MWs “at higher risk” for economic retirement
- Importance of locational value of plants
 - Provide local reliability service by alleviating transmission system congestion by offsetting overloading with generation at or near the load centers
 - Provide subregional reliability service by allowing import limitations to be fully utilized
- Retirements within the Los Angeles Basin sub-region could reduce the capability of importing power into area
- Aging power plants without RMR or other contracts have limited ability to recover their O&M cost

Draft Aging Power Plant Study

Highlights

- Actual operational data shows that given their variability in operation, aging generation is closer in efficiency to new combined cycle plants than nameplate data indicates
- Most of the aging fleet has retrofitted with SCR and are in full compliance with applicable air quality standards
- Retrofitted units have emission rates per therm of gas burned essentially identical to newer combined cycle plants
- Average emissions of aging generation better than simple cycle combustion turbines
- Expected cost of compliance with new regulations on once-through cooling not likely to drive retirement decisions in the study time period

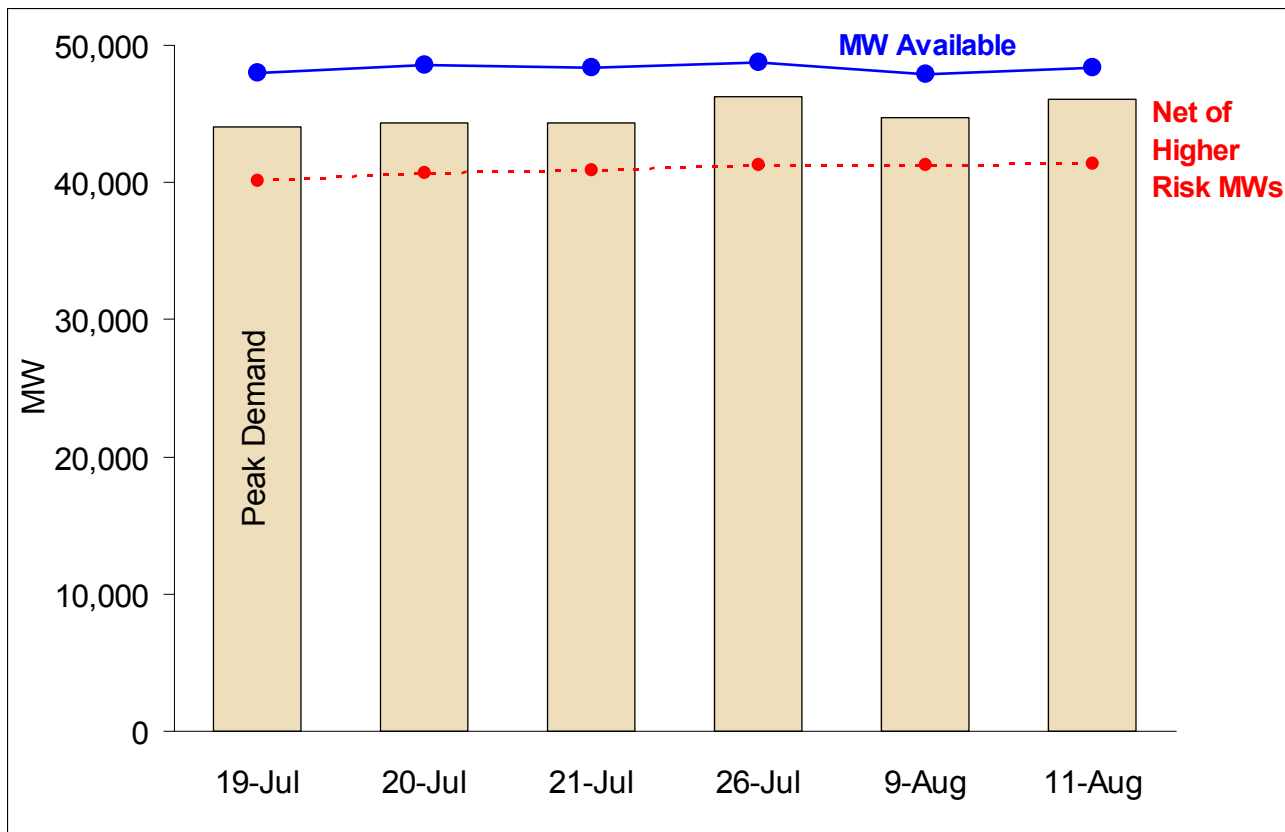
Draft Aging Power Plant Study Oversights

- No discussion on value of repowerings at the critical existing load pocket sites
- Needs additional discussion on Land Use and Socioeconomics
- No discussion on the synergies between Desalination plants and existing coastal power plants
- Did not examine what forms of capacity market and levels of capacity compensation might be required to retain aging generation or attract new generation
- Does not take a support position on Deliverability Standards
- Not enough policy recommendations

Time is of the Essence

- Since this process began it has become imperative that California maintain it's existing generation
- Load growth in CA and throughout the West is robust with demand is outstripping supply (dynamic growth seen beyond CA in AZ, NM, and NV)
- Load has increased about 6% from 2003 and California continues to set new record demand levels with every new heat wave
- Still no state policy on repowerings
- Tradable capacity markets still in discussion stage
- MRTU (formally MD02) is years away from implementation
- Aging plant owners are making business decisions **now** for 2005 and beyond

CAISO Resource Balance on Record-Breaking Days in 2004



“Peak Demand” as reported in CAISO's Press Releases

“MW Available” from CAISO's “2004 Summer Assessment,” April 16, 2004, Table III-1, net actual CAISO reported outages.

“Net of Higher Risk MWs” equals MW Available minus Higher Risk Capacity from CEC's Draft Staff White Paper *Resource Reliability and Environmental Concerns of Aging Power Plant Operations and Retirements*, August 2004.

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Chapter 2: The Role Of Aging Generating Units

- Aging fleet will be needed to meet energy needs and peak demand over the next 3-5 years
- Energy used to alleviate intrazonal transmission congestion comes from the FERC-imposed must-offer requirement
- Must-offer is a temporary requirement and can be revoked by FERC at any time
- There is a permanent role for existing sites in providing local reliability services
- Utilities must be required to procure deliverable energy and capacity in or near the load centers

Chapter 3: Reliability Analysis

- Fact that retirements of older generating units in Southern California will lower the import capability for SP 15 demonstrates the need to maintain generation at those sites
- Further study is needed on the impact of retirements in SDG&E's area on the SCE local reliability (SCIT, reactive power)
- SDG&E import limits are exceeded in the base case and are exacerbated in the retirement cases and more clarity is needed on which units are retired in which scenarios
- SDG&E analysis can only be valid for a year year time frame coincident with the RMR one year term

Chapter 3: Reliability Analysis

- RMR does not equal “Low Risk” and plants in the LA Basin sub-region that are low or medium risk for retirement that do not have RMR contracts should be moved to high risk
- Current form of RMR contracts do not guarantee continued operations
 - Contracts are year-to-year: do not support significant reinvestment such as repowering or increased dispatch flexibility
 - Cap adds are supposed to be compensated for at termination but those provisions have been contested
 - Limited use for reliability purposes (local reliability and intrazonal congestion)

Chapter 4: The Future Of Aging Plant Operations

- Resource Adequacy Requirements and Deliverability Standards need to be implemented for all load-serving entities as soon as possible
- Even with all the activity at the CPUC regulatory uncertainty exist in the market today
- Legislative uncertainty also exist in the market today
- Future of aging power plants is dependent on a capacity market or a bilateral capacity contract
- Need to resolve debt equivalency in order for utilities to contract longer term

Chapter 5: Alternatives to Aging Boiler Units

- Repowerings will be required to maintain desired level of system reliability
- Repowerings are the answer to plant retirements
- It will not be an easy task to site new power plants in the Local Reliability Area (LRA) in locations where plants do not exist today
- Upgrades to the transmission system will also allow existing units to move their power to other markets if alternatives materialize
- However, the upgrades to the transmission system needed to reduce need of aging power plants will take time

Chapter 6: Environmental Issues

Associated with Aging Plants

- Repowering provides greater efficiencies in natural gas usage, air emission rates, use of water resources, and use of existing gas and transmission infrastructure – all of which have environmental benefits
- Staff's comparison of the Mt. View plant (1000 MW) to the older units (126 MWs) is not a fair assessment regarding air quality improvements as similarly sized units and short term emission rates should be compared
- Short term emission concentrations (ppm) and rates (pounds/MW-hr) are reduced in repowering projects due to the use of combined cycle and Best Available Control Technology
- New combined cycle units must fully offset permitted emissions with concurrent reductions or credits, including a 20% to 50% surplus reduction
- Therefore, the White Paper should conclude that redeveloping existing aging plant sites with new combined cycle units is good public and environmental policy for California

Chapter 6: Environmental Issues Associated with Aging Plants

- Staff's 316(b) assessment is mostly accurate, but attempts to make conclusions about a process just underway
- The White Paper should only include facts, not opinion
 - Should not opine on the quality of historical studies
 - Should not opine on how 316(b) compliance should be conducted or the efficacy of available control technology
 - These elements are the sole purview of the Regional Water Quality Control Boards and are part of an on-going process
- Phase II 316(b) requires significant reduction in baseline impingement & entrainment, but does not directly require assessment of impacts (direct or cumulative)

Chapter 7: Land Use and Socioeconomics

- Desalination projects at existing coastal power plant sites should receive more discussion
- Economic impact of existing generation on city budgets affected by Property Tax, Utility Users Taxes, Redevelopment Zone Fees, Vendors Sales Tax
- Other uses of power plant property
 - City of Carlsbad public use of inner lagoon
 - White Sea Bass Hatchery
 - Aqua Farm
- Maintenance dredging of outer lagoon creates protected areas for Special Status Species and dredged sand is deposited on local beaches for sand replenishment

Recommendations

- Draft Staff White Paper should support Repowerings at locations studied in the APPS as good public policy for California
- Energy Commission should support Repowerings as an explicit resource in the loading order of the Energy Action Plan ahead of conventional supply at greenfield locations
- APPS should acknowledge that FERC mandated must-offer requirements can be revoked at any time
- APPS should not rely on conclusion that RMR contracts guarantees continued plant operations
- APPS should acknowledge the valuable synergies between Desalination plants and existing coastal power plant sites
- APPS needs a separate chapter on Land Use and Socioeconomics